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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,103	09/23/2003	Chungte W. Chen	PD 03W008	8175
7590 08/09/2005			EXAMINER	
Leonard A. Alkov Raytheon Company P.O. Box 902 (E1/E150) El Segundo, CA 90245-0902			NGUYEN, TU T	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/670,103	CHEN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Tu T. Nguyen	2877	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some    \* c) ☐ None of:
    - 1. ☐ Certified copies of the priority documents have been received.
    - 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    - 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br/>Paper No(s)/Mail Date <u>02/28/2005</u>.</li> </ul> | <ul style="list-style-type: none"> <li>4) <input type="checkbox"/> Interview Summary (PTO-413)<br/>Paper No(s)/Mail Date. _____</li> <li>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</li> <li>6) <input type="checkbox"/> Other: _____</li> </ul> |
|--|---|

## **DETAILED ACTION**

### ***Claim Objections***

Claim 14 is objected to because of the following informalities:

Claim 14, line 1, "an objective" should be changed to "an objective lens".

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Courtial J. et al ("Design of a static Fourier-transform spectrometer with increased field of view", Applied Optics, Vol. 35, No. 34/ 1 December 1996) OR Padgett et al (5,781,293) in view of Kalawsky (GB 2 268 022).

With respect to claim 1, Courtial discloses an achromatic beam-splitting polarizer (Wollaston prism, fig 5) that receives a polychromatic image beam (incident light, fig 5) of a scene and simultaneously produces a first polarized polychromatic image beam and a second polarized polychromatic image beam, wherein the second polarized polychromatic image beam is of a different polarization than the first polarized polychromatic image beam and is angularly separated from the first polarized polychromatic image beam (polarization state, fig 5); and an imaging detector (camera,

fig 5) that receives the first polarized polychromatic image beam and the second polarized polychromatic image beam.

Padgett discloses an achromatic beam-splitting polarizer 22 (fig 5) that receives a polychromatic image beam (Extended input, fig 5) of a scene and simultaneously produces a first polarized polychromatic image beam and a second polarized polychromatic image beam, wherein the second polarized polychromatic image beam is of a different polarization than the first polarized polychromatic image beam and is angularly separated from the first polarized polychromatic image beam (column 3, lines 54-67); and an imaging detector 30 (fig 5) that receives the first polarized polychromatic image beam and the second polarized polychromatic image beam.

Courtial or Padgett do not explicitly disclose producing an output image signal responsive to the first polarized polychromatic image beam and the second polarized polychromatic image beam. Kalawsky discloses a polarization image detector. The detector comprises: detectors 8,9 (fig 1) producing an output image signal responsive to the first polarized polychromatic image beam and the second polarized polychromatic image beam. It would have been obvious to modify Courtial or Padgett with the detectors as taught by Kalawsky to produce output image signals responsive to the first polarized polychromatic image beam and the second polarized polychromatic image beam to analyze the image signal easier.

With respect to claim 2, Padgett discloses the claimed wollaston prism 38 (fig 7) and an additional prism 40 (fig 7).

With respect to claims 3-6, Courtial or Padgett do not disclose the claimed gratings. However, it would have been obvious to modify Courtial or Padgett with the claimed gratings located before and/or after the prism to control the beam path easier.

With respect to claims 7,13, Padgett discloses the claimed half-wavelength plate 24 (fig 5) (column 3, lines 52-53).

With respect to claim 8, Courtial or Padgett do not disclose a telescope. However, it would have been obvious to modify the prior arts with the telescope to increase the intensity of the input beam.

With respect to claim 9, Courtial discloses the claimed imaging optics (camera, fig 5).

With respect to claims 10,15, Kalawsky discloses a first 8 (fig 1) and second 9 (fig 1) portions of detector. The portions are spatially separated from other.

With respect to claims 11,16, it would have been obvious to modify the first and second polarized beams of Courtial or Padgett to be interlineated on the imaging detector for different testing purposes.

With respect to claim 12, refer to discussion in claim 1 above for the prism and refer to discussion in claim 3 above for the grating.

With respect to claim 14, Kalawsky discloses the objective lens 1 (fig 1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tu T. Nguyen whose telephone number is (571) 272-2424. The examiner can normally be reached on T-F 7:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Toatley Jr. can be reached on (571) 272-2800 Ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tu T. Nguyen  
Primary Examiner  
Art Unit 2877

08/06/2005